

I claim.

1. Turbine apparatus capable of producing power when held stationary in a stream of flowing water, comprising:

5 a floatable body having two spaced, parallel, hollow side members joined by several spaced cross members, said side and cross members being arranged so that said side members provide a flow passage for water therebetween from an upstream end of said body to a downstream end thereof while the cross members are largely above the level of water in which said body floats;

10 at least one rotor having blades and being rotatable on a horizontal shaft, said shaft having opposite end portions mounted in bearings each held by one of said side members so that the shaft is normally above the said water level and so that said blades extend down into the water in the flow passage and are transverse to the direction of water flow in said passage; and

15 power producing means rotatably connected to said rotor; and wherein upstream ends of said side members have deflecting surfaces configured to direct the flowing water laterally into said flow channel to enhance the energy of water flowing through said channel.

20 2. Turbine apparatus according to claim 1, wherein two of said rotors are provided, one being adjacent to the upstream end of the body and one being adjacent to the said downstream end, and said cross members are all positioned between the said rotors.

25 3. Turbine apparatus according to claim 1, wherein said hollow side members are both in the form of tubes, and wherein said deflecting surfaces are provided by end faces of said tubes, each end face extending across the full width of the respective

side member and being sloped at angle of less than 50° to a longitudinal axis of the tube in such direction as to direct flowing water into said channel.

5 4. Turbine apparatus according to claim 1, wherein said hollow side members are both in the form of tubes, and wherein said power producing means are electrical generators located in one or both of said tubes.

5. Turbine apparatus according to claim 1, wherein each said rotor includes a hollow, watertight cylinder which is buoyant.

10 6. Turbine apparatus according to claim 5, wherein said blades of the rotor are also hollow and watertight.

15 7. Turbine apparatus according to claim 2, wherein said rotors are provided in a fore-and-aft symmetrical arrangement, and are oppositely arranged so that water flowing from a first end of said flow passage to the second end rotates a first of the rotors, and water flowing from the second end to the first end of said passage rotates a second of said rotors.

20 8. Turbine apparatus according to claim 1, further comprising a wind turbine supported by said cross-members.

9. Turbine apparatus for obtaining power when held stationary in a stream of flowing water, comprising:

25 a floatable body having two spaced, parallel, hollow side members joined by several spaced cross members, said side and cross members being arranged so that said side members provide a flow passage for water therebetween from an upstream end of said body to a downstream end thereof while the cross members are largely above the level of water in which said body floats;

at least one rotor having blades and rotatable on a horizontal shaft, said shaft having opposite end portions mounted in bearings each held by one of said side members so that the shaft is normally above the said water level and so
5 that said blades extend down into the water in the flow passage and are transverse to the direction of water flow in said passage;

power producing means rotatably connected to said rotor;
and

10 a wind turbine supported by said cross-members.

15 9. Apparatus according to claim 8, wherein two of said rotors are provided, one being adjacent to the upstream end of the body and one being adjacent to the said downstream end, said cross members being all positioned between the said rotors, and wherein said wind turbine is supported by said cross members and is located between said rotors.